

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims in the present application.

What Is Claimed Is:

1. (previously presented) A storage system, comprising:

a plurality of data storage logical units (LUs) comprising a plurality of physical media, the plurality of LUs being adapted to receive commands, and responsive to the commands to store and recall data; and

a plurality of ports, each port being adapted to maintain a plurality of LU command queues, each of the plurality of LU command queues corresponding to a respective one of the LUs, such that upon receiving a command directed to one of the LUs, the port places the received command in the respective LU command queue, converts the received command to one or more converted commands at least some of which are directed to the plurality of the physical media of the one of the LUs, and conveys the at least some converted commands to the plurality of the physical media in an order determined by the respective LU command queue.

2. (original) The storage system according to claim 1,

wherein the command is comprised in one of a plurality of strings of commands each directed to a respective one of the ports, and

wherein each of the ports is coupled to receive the respective string of commands directed thereto.

3. (previously presented) The storage system according to claim 1,

wherein the plurality of ports comprises a first port and a second port,

wherein the first port conveys a first string of the at least some converted commands in a first order to the plurality of the physical media,

wherein the second port conveys a second string of the at least some converted commands in a second order to the plurality of the physical media, and

wherein the plurality of the physical media is adapted to receive the first string and to store and recall the data in response to the first order, and to receive the second string and to store and recall the data in response to the second order.

4. (original) The storage system according to claim 1, wherein the command comprises a request according to a small computer system interface (SCSI) protocol, and wherein the storage system is operative according to the SCSI protocol.

5. (original) The storage system according to claim 1, wherein each of the ports comprises a respective central processing unit (CPU) which operates each of the ports substantially independently.

6. (original) The storage system according to claim 1, wherein the command is comprised in one of one or more strings of commands, each command of each string being directed via one of the ports to a respective one of the LUs, and comprising a coupling which:

receives the commands comprised in the one or more strings,

sorts the commands according to the ports via which the commands are directed, and

conveys the commands to the ports to which the commands are directed.

7. (previously presented) The storage system according to claim 1,

wherein the received command comprises a write command to store a data string from a host to the plurality of the physical media,

wherein the one or more converted commands comprise instructions to the host to convey the data string to the plurality of the physical media via the port, and

wherein the port is adapted to convey the instructions to the host.

8. (previously presented) The storage system according to claim 1,

wherein the received command comprises a read command from a host to read a data string from the plurality of the physical media, and

wherein the one or more converted commands comprise instructions to convey the data string via the port to the host.

9. (previously presented) The storage system according to claim 1,

wherein the plurality of the physical media comprise the data, and

wherein the port is adapted to track changes of location of the data within the plurality of the physical media.

10. (previously presented) A method for processing data; comprising:

storing and recalling data in a plurality of data storage logical units (LUs), comprising a plurality of physical media, responsively to commands; and

configuring in each of a plurality of ports a plurality of LU command queues, each of the plurality of LU command queues corresponding to a respective one of the LUs, such that upon receiving a command directed to one of the LUs, the port places the received command in the respective LU command queue, converts the received command to one or more converted commands at least some of which are directed to the plurality of the physical media of the one of the LUs, and conveys the at least some converted commands to the plurality of the physical media in an order determined by the respective LU command queue.

11. (previously presented) The method according to claim 10,

wherein the command is comprised in one of a plurality of strings of commands each directed to a respective one of the ports, and

further comprising coupling each of the ports to receive the respective string of commands directed thereto.

12. (previously presented) The method according to claim 10, wherein the plurality of ports comprises a first port and a second port, the method further comprising:

conveying from the first port a first string of the at least some converted commands in a first order to the plurality of the physical media; and

conveying from the second- port a second string of the at least some converted commands in a second order to the plurality of the physical media;

wherein storing and recalling the data comprises, at the plurality of the physical media:
receiving the first string and storing and recalling the data in response to the first order;
and

receiving the second string and storing and recalling the data in response to the second order.

13. (original) The method according to claim 10,

wherein the command comprises a request according to a small computer system interface (SCSI) protocol, and

wherein the plurality of ports are comprised in a storage system operative according to the SCSI protocol.

14. (original) The method according to claim 10, wherein each of the plurality of ports operates substantially independently of other ports comprised in the plurality.

15. (original) The method according to claim 10, wherein the command is comprised in one of one or more strings of commands, each command of each string being directed via one of the ports to a respective one of the LUS, and comprising:

receiving the commands comprised in the one or more strings;

sorting the commands according to the ports via which the commands are directed; and

conveying the commands to the ports to which the commands are directed.

16. (previously presented) The method according to claim 10,

wherein the received command comprises a write command to store a data string from a host to the plurality of the physical media,

wherein the one or more converted commands comprise instructions to the host to convey the data string to the plurality of the physical media via the port, and

wherein the port is adapted to convey the instructions to the host.

17. (previously presented) The method according to claim 10,

wherein the received command comprises a read command from a host to read a data string from the plurality of the physical media, and

wherein the one or more converted commands comprise instructions to convey the data string via the port to the host.

18. (previously presented) The method according to claim 10, wherein the plurality of the physical media comprise the data, and comprising tracking at the port changes of location of the data within the plurality of the physical media.

19. (previously presented) The storage system according to claim 1, wherein each port uses at least one table to convert logical data in the received command to data suitable for a respective physical media to which the command is directed.

20. (previously presented) The storage system according to claim 1, wherein each port uses one or more functions to convert logical data in the received command to the data suitable for a respective physical media.

21. (previously presented) The storage system according to claim 1, wherein at least one of the converted commands directed to the plurality of the physical media is first sent to a fast access time memory acting as a buffer, said fast access time memory being adapted to redirect the converted command to a respective physical media.

22. (previously presented) The method according to claim 10, wherein at least one of the converted commands directed to the plurality of the physical media is first sent to a fast access time memory acting as a buffer, said fast access time memory being adapted to redirect the converted command to a respective physical media.

23. (previously presented) The storage system according to claim 1, wherein the plurality of the physical media comprise a plurality of slow access time non-volatile physical media.

24. (previously presented) The method according to claim 10, wherein the plurality of the physical media comprise a plurality of slow access time non-volatile physical media.

25. (previously presented) The storage system according to claim 1, wherein a particular physical media of the plurality of the physical media changes over time.

26. (previously presented) The method according to claim 10, wherein a particular physical media of the plurality of the physical media changes over time.

27. (previously presented) The storage system according to claim 1, wherein each data storage logical unit (LU) is distributed across a plural subset of the plurality of the physical media.

28. (previously presented) The method according to claim 10, wherein each data storage logical unit (LU) is distributed across a plural subset of the plurality of the physical media.

29. (currently amended) The storage system according to claim 1, wherein

wherein the port converting the received command to the one or more converted commands ~~includes converting~~converts a logical block address and a length of a data string included in the received command; and

wherein the converting operation performed by the port also determines if the command is one of a read command and a write command.

30. (currently amended) The method according to claim 10,

wherein the port converting the received command to the one or more converted commands ~~includes converting~~converts a logical block address and a length of a data string included in the received command; and

wherein the converting operation performed by the port also determines if the command is one of a read command and a write command.